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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,240	04/30/2001	James A. Proctor JR.	2479.1041-001	2856

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EXAMINER

MARCELO, MELVIN C

ART UNIT	PAPER NUMBER
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2663

DATE MAILED: 07/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/845,240

Applicant(s)

PROCTOR, JAMES A.

Examiner

Melvin Marcelo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11, 14-24, 26, 28-30 and 34-36 are is/are rejected.
- 7) ☒ Claim(s) 10, 12, 13, 25, 27 and 31-33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 7-9, 11, 15-20, ~~22~~, 24, 26, 28-30, 35, and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Campana, Jr. et al. (US 6,567,397 B1).

With respect to the claims below, references to the prior art appear in parenthesis.

1. A method for communicating data to at least one of a plurality of receivers in a wireless communication system (**Campana, Figure 1**), the method comprising: allocating at least one channel of multiple available wireless channels to carry time-slotted data packets to a receiver on an as-needed basis (**Column 4, line 33 to column 5, line 2**); and providing a preamble in a data packet (**Figure 2 and column 5, lines 13-60**), the preamble indicating a modulation type used in a transmission of a portion of the data packet (**Column 3, lines 6-11 and column 5, lines 31-33**).
2. A method as in claim 1, wherein the portion of the data packet is a data payload (**Message block 50 in Figure 2 and column 5, lines 52-56**) that is to be decoded by a target receiver to which the data packet is directed (**Column 5, lines 43-48**).
3. A method as in claim 1, wherein data packets include a data payload for a target receiver (**Message block 50 in Figure 2**) and a modulation rate of the data payload is selected from one of multiple possible rates (**Column 4, lines 33-36**).
4. A method as in claim 3, wherein the modulation rate of the data payload is selected depending on observed link quality parameters of the wireless communication system (**Column 5, lines 3-12, observed link quality based on distance between base station and mobiles**).
7. A method as in claim 1, wherein the preamble includes address information indicating to which of multiple receivers a data

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packet is directed (Variable-length RT notification block 46 in Figure 2 and column 5, lines 43-48).

8. A method as in claim 1 further comprising the step of: decoding a preamble of received data packet at a receiver to determine a target destination of the data packet (Variable-length RT notification block 46 in Figure 2 and column 5, lines 43-48).

9. A method as in claim 8 further comprising the step of: decoding a payload of a received data packet at a target receiver (Message block 50 in Figure 2 and column 5, lines 52-56).

11. A method as in claim 1 further comprising the step of: providing information in the preamble of a data packet to indicate which of multiple following timeslotted data packets are directed to a target receiver (Offset in the RT notification block 46 in column 5, lines 43-48).

15. A method as in claim 1 further comprising: at a target receiver, combining information received in multiple data packets to reconstruct a network message (Single message may span several FEC blocks, column 8, lines 40-41).

16. A method as in claim 1 further comprising: assigning a time slot for use by a target receiver by transmitting a message over a dedicated channel for allocating use of wireless resources (Column 9, lines 17-28 and Figure 5).

17. A method as in claim 1 further comprising: at a target receiver, demodulating and decoding a data payload portion of a data packet received in an assigned time slot (Column 8, lines 46-54).

18. A method for receiving data packets on one or more shared channels in a wireless communication system (Figure 1), the method comprising: synchronizing a receiver to receive data packets transmitted in time-slots of at least one shared data channel (Column 4, line 33 to column 5, line 2); monitoring a first portion of a received data packet to determine to which receiver of multiple possible receivers sharing an assigned data channel a data packet is directed (RT notification block 46) and a modulation type used in a transmission of a corresponding data payload of the data packet (Modulation type byte in preamble block 40 in column 5, lines 31-33); and decoding the data payload of the received data packet at a target receiver based on a modulation type as indicated in the first portion of the received data packet (Column 6, lines 1-9).

19. A method as in claim 18, wherein a data payload is decoded according to a selected transmission rate (Column 4, lines 33-36).

20. A method as in claim 18, wherein the data payload is modulated independently of the first portion of the data packet (Column 8, lines 9-27).

22. A method as in claim 21, wherein the first portion of a given data packet includes specific information that is used for

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decoding a payload of the corresponding data packet (**Preamble 40 in column 5, lines 27-33**).

23. A method as in claim 18, wherein a modulation rate of the data payload depends on observed link quality parameters of a channel upon which it is transmitted (**Column 5, lines 3-12, observed link quality based on distance between base station and mobiles**).

26. A method as in claim 18 further comprising the step of: recombining payloads of multiple data packets at a target receiver to reconstruct a network message that is forwarded to a processing device (**Single message may span several FEC blocks, column 8, lines 40-41**).

28. A method of transmitting a data block from at least one base station to one of multiple receivers in a wireless communication system (**Figure 1**), the method comprising: reducing the data block into smaller sub-blocks (**Single message may span several FEC blocks, column 8, lines 40-41**); producing data packets by appending a header label to each sub-block (**Figure 2**), the header label of a sub block indicating how to recapture a corresponding sub block of a data packet at a receiver (**Column 5, lines 26-60**); and at the base station, transmitting the data block via data packets to a target receiver over at least one wireless channel by modulating the sub-block of a data packet according to corresponding information in the header label of a data packet (**Column 4, line 33 to column 5, line 2**).

29. A method as in claim 28, wherein the at least one wireless channel is shared and the data packets are transmitted on an as-needed basis (**Column 4, line 33 to column 5, line 2**).

30. A method as in claim 28, wherein the data packets from the base station are transmitted in time slots and the receivers are synchronized to receive data transmitter in the time slots (**Synchronous time division multiplexed architecture, see Abstract**).

35. A method as in claim 28, wherein a header label includes address information indicating to which of multiple receivers a data packet is directed (**Variable-length RT notification block 46**).

36. A method as in claim 28 further comprising the step of combining the data packets at a target receiver to reproduce an original data block (**Single message may span several FEC blocks, column 8, lines 40-41**).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5, 6, 14, 21, 24 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campana, Jr. et al. in view of Shahar et al. (US 2003/0002495 A1). Campana does not teach selecting from multiple FEC based on link quality and transmitting the preamble at a different rate from the data payload. Shahar teaches a similar wireless communication system to Campana, wherein different FEC's are selected based on robustness (paragraph 0008 and 0079). A skilled artisan would have been motivated to adopt Shahar's teachings into Campana for the reason that Shahar teaches the combination of providing the modulation format and the FEC format in the preamble of the packet (see Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include FEC selection in Campana as shown by the combination in Shahar. With respect to the claims below, references to the prior art appear in parenthesis.

5. A method as in claim 1 further comprising the step of: encoding bits of the data payload according to a selected forward error correction code, the forward error correction code for a given data packet being selected based on observed link quality parameters of the wireless communication system (Shahar, paragraph 0008 and FEC scheme in Table 6).

6. A method as in claim 5 further comprising the step of: providing information in the preamble of a data packet to indicate a forward error correction code of a corresponding data payload of the data packet (Shahar, Table 4).

14. A method as in claim 1 further comprising: modulating a preamble of a data packet at a different rate than a data payload portion of the data packet.

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21. A method as in claim 20, wherein the data payload is transmitted at a different rate than the first portion of the data packet (It would have been obvious to have different rates with the preamble and data payload since they can each have different modulation symbol rates as taught by Shahar, paragraph 0029).

24. A method as in claim 18 further comprising the step of decoding bits of the data payload according to a selected forward error correction code, the forward error correction code for a given data packet being identified in the first portion of the corresponding data packet (Shahar, Table 4).

34. A method as in claim 28, wherein a header label includes information indicating a forward error correction code of a corresponding sub-block of a data packet (Combination of Campana and Shahar).

Allowable Subject Matter

5. Claims 10, 12-13, 25, 27 and 31-33 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to anticipate or make obvious the additional features of these claims.

10. A method as in claim 1, wherein the preamble indicates a spreading factor used in a transmission of the data payload.

12. A method as in claim 1, wherein blocks of data at a transmitter of the wireless communication system are repackaged into smaller blocks that are transmitted over multiple channels in multiple time-slots, so that information in received data packets can be recombined at a target receiver.

13. A method as in claim 1, wherein the channels are forward link channels between a base station and multiple receivers of a CDMA (Code Division Multiple Access) communication system.

25. A method as in claim 18, wherein the first portion of a data packet includes information indicating a spreading factor of a data payload.

27. A method as in claim 18, wherein the shared channels are forward link CDMA (code division multiple access) channels between a base station and multiple receivers.

31. A method as in claim 28, wherein the shared channels are defined by pseudo-random noise codes of a CDMA (code division multiple access) communication system.

32. A method as in claim 28, wherein a data block is transmitted from a receiver to a base station over shared reverse link channels of a CDMA (Code Division Multiple Access) communication system.

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33. A method as in claim 28, wherein a header label includes information indicating a spreading factor of a corresponding sub-block of a data packet.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Marcelo whose telephone number is 703-305-4373. The examiner can normally be reached on Mon-Fri 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 703-308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Melvin Marcelo
Primary Examiner
Art Unit 2663

June 28, 2004